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# DRAFT COCOM PAPER ON OIL AND GAS TECHNOLOGY CONTROLS AND EMERGING TECHNOLOGY INVENTORY LIST

In November 1982, ministerial representatives of the Western Alliance met at La Sapiere to discuss the need for and elements of a common approach to East-West economic relations. As a result of this meeting it was agreed that a number of study groups would be established to examine the current and prospective nature of the Soviet Bloc threats to Western economic security as well as the most effective multilateral means of addressing these threats.

As part of this process, it was agreed that COCOM would establish an Ad Hoc Group with the following mandate.

- 1) To identify and consider the case for controlling other high technology items (equipment, materials, and technical data), including those with oil and gas applications, not now controlled nor being considered for control in the current List Review; and
- 2) To examine the desirability and modalities of monitoring in COCOM emerging technologies which at some future date could be considered for control.

In February 1983, the United States proposed that this Ad Hoc Group on Other High Technologies (OHT) develop an inventory of emerging technologies which would be monitored by COCOM. The inventory would include technologies of potential security significance not presently proposed for control by COCOM, nor used in current production, but which might enter into production within the next five years. At such time, if any member nation believed that a dual military application of any item on the list was feasible, COCOM would consider a concrete proposal for its control.

For illustrative purposes, the U.S. suggested a number of emerging technologies which could be considered for inclusion in such an inventory list. These included molecular bio engineering technologies, advanced ceramic and ceramic composite processing, adaptive optics technology, relativistic electron beam microwave generation, strategic applications of artificial intelligence, and biocybernetic communication.

It was emphasized that such an inventory was not a control mechanism but only a tool to help identify items which may be considered for control at some future date.

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With regard to strengthening multilateral export controls, the United States developed an initial list of oil and gas exploration, production and transmission technologies, and technical data for consideration by the Ad Hoc group. The U.S. objective was to focus upon high priority, dual-use technology rather than upon standard end-use equipment that is commonly available from multiple sources. In proposing this list, the United States specifically took into consideration (1) the Soviet need for each item in order to enhance strategic military capabilities, (2) the Soviet need for each item in order to improve export capabilities and production of relatively inaccessible energy reserves, (3) the sophistication of the technology involved as well as the Soviet ability to easily substitute domestic technology, and (4) the ready availability of the items from non-COCOM manufacturers. This initial list included the following items:

- Side scan sonar systems
- Sub-bottom profilers
- Geophones and specially designed transmitting equipment
- Gravity meters
- Well and mud-logging systems
- Magneto telluric systems
- Satellite navigation systems
- Seismic exploration vessels
- Submersible vehicles
- Deep submersible pumps
- High pressure equipment
- Off shore positioning systems
- Deep well rigs (on and off shore)
- Variable speed gas turbine engines
- Technical data and services for new energy projects (including enhanced recovery)
- Monitoring requirements to track major oil and gas projects. Equipment to be monitored include 1) large compressors, 2) automatic pipe welders, and 3) corrosion resistant well head equipment.

The U.S. delegation to the March Ad Hoc meeting formally presented these proposals for consideration and promised to provide detailed justifications for the imposition of multilateral controls on each item. As a result of this first Ad Hoc meeting, it was agreed that:

- o There would be full analysis of proposals submitted by member governments for the control of oil and gas and other high technologies.
- o There would be a further examination of desirability and modalities of monitoring emerging technologies which at some future date could be considered for control.

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- o The next ad hoc meeting would be in April 1983, just before the COCOM High Level Meeting (HLM).
- o There would be a progress report submitted to the HLM on the ad hoc group's work.

It was further agreed that delegations could also address the following issues in the context of the Ad Hoc group's mandate.

- o The recent pattern of Soviet imports of oil and gas equipment and technology;
- o The contribution of Western equipment and technology exports to Soviet energy development;
- o Soviet capabilities in producing domestically the equipment necessary for their development of energy resources;
- o The availability from non-COCOM countries of items submitted for the Group's attention;
- o The effects of COCOM controls on Soviet energy production capacities.

At the second Ad Hoc group meeting in April 1983, the U.S. proposals for oil and gas equipment and technology controls as well as the proposal for an emerging technology inventory list were carefully reviewed. As a result of this meeting it was agreed that:

- A. With respect to its task, in accordance with the COCOM strategic criteria, to identify and consider the case for controlling other high technology items (equipment, materials, and technical data), including those with oil and gas applications, not now controlled nor being considered for control in the current List Review:
  - 1) Further study of the proposals in COCOM Doc. TECH (83) 1 would be required, taking into account the need for more information on military applications, third country availability, Warsaw Pact capabilities, and precise technical parameters;
  - 2) In the course of the discussions, the following points were identified:
    - a) Loopholes which may exist in items now on the list should be closed;
    - b) Strengthening of Item 1510 on systems for detecting underwater or subterranean objects or features should be further considered;

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- c) In considering the German proposal for greater specificity in defining embargoed technology (COCOM Doc. REV. (82) 28), the Committee was invited to consider inclusion of the following:
  - (i) Feasibility studies, program definition studies, program technical execution or management, and technical services, bearing in mind the possible risk of transfer of strategic technology under arrangements whereby the transferee obtains experience and training in a direct person-to-person manner working directly with embargoed equipment;
  - (ii) Technology for integrating embargoed equipment into systems, such as magneto-telluric systems, seismic exploration vessels, submersible vehicles, off-shore positioning equipment, and deep well rigs;
  - (iii) Technology for the development, design and production of items such as (a) deep submersible pumps and (b) equipment capable of operating at high pressure, at high temperature, and in a corrosive environment;
- d) The need for a Watch List, whereby COCOM would receive periodic post-shipment reports for items for which sales of larger quantities were of more concern than sales of individual pieces of equipment, should be further examined.

B. With respect to its task related to considering the desirability of an emerging technologies inventory list; the High Level Meeting would be invited to consider such a list taking into account the following principles:

- 1) Normal COCOM procedures would be followed;
- 2) Technologies still in development stages would be carefully monitored as to their potential strategic applications;
- 3) A Watch List would not be a control list and would be used for warning and informational purposes only;
- 4) Member Governments would periodically exchange information on developments in the areas of the technologies on the inventory of Emerging Technologies, with special emphasis on indications of prospective successful military-related applications;

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- 5) Due consideration should be given to the fact that there would be great restraint on obtaining information on Emerging Technologies which come under the private sector.

At the April 1983 High Level Meeting, senior representatives of the COCOM countries reaffirmed their commitment to the work at the OHT Ad Hoc Group and gave instructions that it be pursued with vigor.

In view of the results of the April 1983 Ad Hoc meeting, the U.S. made a number of modifications to its oil and gas technology proposal and submitted a revised package for consideration by the OHT group.

At the July 1983 Ad Hoc meeting, most questions related to the establishment of an emerging technology inventory list were resolved. The U.S. proposals related to oil and gas technology controls, were also further discussed and the strategic rationales for controlling each item were elaborated.

The Ad Hoc Group on OHT has now completed its work and has agreed upon the following:

- A. With respect to its task, in accordance with the COCOM strategic criteria to identify and consider the case for controlling high technology items (equipment, materials, and technical data), including those with oil and gas applications, not now considered for control on the current list review, the Ad Hoc group proposes the following items for COCOM control.
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|---------------------------|---|
| 1. IL-1131                | Pumps, deep submersible                         |
| 2. IL-1416                | Geophysical - seismic survey vessels            |
| 3. IL-1501                | Navigation equipment                            |
| 4. IL-1510                | Acoustic/ultrasonic underwater equipment        |
| 5. IL-1595                | Gravity   |
| 6. IL-1100 NI             | Corrosion resistant oil and gas equipment       |
| 7. IL-1100 NI             | High pressure/temperature oil and gas equipment |
| 8. IL-1100 NI             | Deep well drilling rigs                         |
| 9. IL-1500 NI             | Magneto-telluric systems                        |
| 10. IL-1500 NI            | Well logging equipment                          |
| 11. IL-1500 NI            | Mud logging equipment                           |
| 12. Tech Data             | Feasibility studies                             |
| 13. Tech Data Integration | Magneto telluric systems                        |

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| 14. Tech Data Integration        | Survey vessels  |
| 15. Tech Data Integration        | Submersible vehicles                                  |
| 16. Tech Data Integration        | Offshore posit & navigation systems                   |
| 17. Tech Data Design, Dev. Prod. | Deep well rigs  |
| 18. Tech Data Design, Dev. Prod. | Hi-pressure temperature corrosive oil and gas systems |
| 19. Tech Data Design, Dev. Prod. | Deep submersible pumps                                |
| 20. Tech Data Design, Dev. Prod. | Hi-pressure temp. oil and gas systems                 |
| 21. Tech Data Design, Dev. Prod. | Corrosion resistant oil and gas systems               |

A detailed description of these items is attached, Tab A.

It was agreed that all of the above items have major strategic and military significance for the Soviet Union and that denying them access to these items would strengthen the fabric of Western security. Multilateral controls would be effective in preventing the USSR's acquisition of these technologies due to limited or no availability outside COCOM. Furthermore, it was noted that restrictions on the sale of these technologies and equipment would have only a minimal impact on the overall level of East-West trade.

- B. It was further agreed that a watch list would be established to track large quantity sales of surface, subsurface and field processing equipment. Such a watch list is not intended as a control mechanism but rather as a means of assisting COCOM countries in identifying Soviet energy production and exploration priorities and projects which could have an impact on their collective security. A detailed description of these items is attached at Tab B.
- C. With respect to its task to examine the desirability of monitoring in COCOM emerging technologies which at some future date could be considered for control, the Ad Hoc group agreed that such an inventory list should be established. The COCOM countries agreed that this inventory would better enable them to assess potential technological innovations that may have military significance. Details regarding the agreed modalities of this inventory are attached at Tab C.

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